

Big business with Chinese characteristics: two paths to growth of the firm in China under reform

Article (Unspecified)

Nolan, P and Yeung, Godfrey (2001) Big business with Chinese characteristics: two paths to growth of the firm in China under reform. Cambridge Journal of Economics, 25 (4). pp. 443-465. ISSN 0309-166X

This version is available from Sussex Research Online: <http://sro.sussex.ac.uk/id/eprint/121/>

This document is made available in accordance with publisher policies and may differ from the published version or from the version of record. If you wish to cite this item you are advised to consult the publisher's version. Please see the URL above for details on accessing the published version.

Copyright and reuse:

Sussex Research Online is a digital repository of the research output of the University.

Copyright and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable, the material made available in SRO has been checked for eligibility before being made available.

Copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

Published in the *Cambridge Journal of Economics*, Vol. 25, No. 4, July 2001, pp.
443-465

Big Business with Chinese Characteristics: Two Paths to Growth of the Firm in China under Reform*

By

Prof. Peter Nolan
Sinyi Professor of Chinese Management
The Judge Institute of Management Studies
University of Cambridge
Trumpington Street
Cambridge CB2 1AG

Dr. Godfrey Yeung[†]
Research Fellow
Sidney Sussex College
Sidney Street
Cambridge CB2 3HU
Tel./Fax: (44)-01223-338837
E-mail: kgy20@cam.ac.uk

July 1999

Number of words (including footnotes): 10,670 words

* Unless otherwise indicated, the information in this paper is from field work and interviews conducted at the Shougang Group in Beijing and the Sanjiu Enterprise Group in Shenzhen in 1994-1996 and 1997-1998, and from subsequent correspondence with the Groups. The authors are extremely grateful to officials at Shougang and Sanjiu for allowing them to carry out research at the Groups and supplying them with extensive information on developments at the Corporations subsequent to the field research.

[†] Any further correspondence should be sent to G. Yeung.

ABSTRACT

This paper presents a case study of two large firms which emerged from among the ranks of traditional state-owned enterprises and new entrants: Shougang (steel) and Sanjiu (pharmaceuticals). Rather than being irreconcilable with the market economy, the experience of these two firms suggests that the Chinese Communist Party and the People's Liberation Army possessed a rich legacy of organisational and motivational skills. Moreover, Shougang and Sanjiu both grew rapidly through mergers and acquisitions in the absence of privatisation and a developed stock market. Furthermore, the main reason for Shougang and Sanjiu's success is not special help from the government or the army, but rather the fact that its leadership used their autonomy to construct a highly effective business organisation.

Keywords: big businesses, entrepreneurship, organisational capability, iron and steel, pharmaceutical

1 Introduction

In the analysis of China's industrial reforms, attention has focused on the increasing losses and declining role of the state sector. However, this picture conceals a continuing, indeed increasing, role for big business.

The emergence of the fast-growing market economy in China after 1978 provided opportunities for traditional large plants to grow into more complex big businesses, stimulated especially by booming demand for their upstream products, such as steel and petrochemicals (Nolan, 1995, 1996). However, large firms emerged also from among the ranks of new entrants and small producers. With the exception of excellent but rather outdated research conducted by Byrd (1992) in 1983-1985, there is negligible analysis of the institutional process of the emergence of large Chinese firms under system reform. This paper presents a case study of two such firms, one of each type. The Shougang Group (hereinafter Shougang) is a traditional state-owned enterprise (SOE) which grew into the third largest steel plant while the Sanjiu Group (hereinafter Sanjiu) is a new entrant who became the second largest pharmaceutical plant in China. These firms are strongly shaped by the peculiarities of the Chinese institutional setting. The findings of this paper have profound implications for the development of large enterprises and the SOE reforms in China.

The background of the Chinese steel and pharmaceuticals industries is briefly reviewed in sections 2 and 4 before the analysis of Shougang and Sanjiu in sections 3 and 5. Section 6 concludes the major findings of this paper.

2 The Chinese Steel Industry in Reform

As a traditional strategic industry, the Ministry of Metallurgy Industry (MMI) controlled the overall development of the Chinese steel industry until the late 1980s. In 1997, the MMI was abolished, and replaced by the State Bureau of Metallurgical Industry (SBMI). Despite having delegated many of its functions to the provincial level, the SBMI still retained important planning functions and an influence over key steel policies. With the exception of Shougang (which reports

directly to the Beijing municipal government), the other largest Chinese steel-makers all report directly to the SBMI.

Throughout the 1980s, steel prices and product mix were controlled by the government. The government continued to fix “guidance” prices for the main steel products, even though it freed all steel prices in 1994. The price control and excess demand led to a considerable disparity between planned and market prices of steel, e.g. 1,200-1,400 yuan of planned price for reinforced steels versus up to 3,100 yuan of market price in 1992. In 1998, faced with the sharp decline both in steel prices and industry profitability, the government introduced price floors for steel products temporarily to support the industry’s profits. At present, there are few restrictions on the product mix or choice of customer for China’s large integrated steel plants.

In its efforts to gain admission to the World Trade Organisation (WTO), China sharply reduced tariffs on steel imports. Overall import tariffs on iron and steel (raw and finished) fell from 23.8% in 1992 to 12% in 1996. Import tariffs varied from a low of 1.4% on pig iron to a high of 20.3% on stainless steel bars and rods. By 1996, the licensing system was ended. However, new non-tariff barriers to protect the steel industry from the explosion of steel imports were erected in the mid-1990s, e.g. import “registration” and “canalisation” of steel imports through selected SOEs (Dickson, 1996, pp. 98-99).

The Chinese government has determined to develop the four leading steel enterprises – Baogang, Shougang, Angang and Wugang – into world-class companies, rivalling Nippon Steel and Posco for efficiency and global influence. The strategy for the steel industry is part of the wider industrial policy of **“grasping the large and letting go of the small”** (*zhuada, fangxiao*). The Chinese government intends that by the year 2000, the four leading steel conglomerates will have increased their share of national steel output to 40%. As part of this policy, the central government has banned any new steel plant construction until the end of 2000 (SCMP, 28 October 1998). Each of these four enterprises had an annual output of over five million tons in 1997, and accounted for 28% of China’s total steel output. Their aggregate pre-tax profits in 1996 amounted to 4.4 billion yuan, equal to the profits for the entire Chinese steel

industry. However, they were still not in the front ranks of the world's steel producers. China's highest-ranking steel enterprise in 1998 was Baogang, which ranked thirteenth. Angang ranked twentieth and Shougang twenty-first. Their level of labour productivity is far behind that of the world's leading steel firms. Apart from Baogang, their level of profitability is low: the ratio of profits to sales stood at 8.5% at Baogang, compared to less than 2% at Wugang, Shougang and Angang in 1997. In 1996, the proportion of steel products judged to be at the level of "advanced world standards" stood at 99% at Baogang, 81% at Wugang, 61% at Angang and just 29% at Shougang (ISIC, 1997; CMISI, 1998; IISI, 1999).

3 Military-style Industrial Entrepreneurship: Shougang

3.1 The contract responsibility system

Shougang was run by a former People's Liberation Army (PLA) commander and senior figure in the Chinese Communist Party (CCP), Zhou Guanwu, until 1995.¹ It was one of the first pilot enterprises to undertake the contract responsibility system in 1979. Rather than being negotiated on an annual basis, a 15-year contract (1981-1995) was struck with the direct administrative superior of Shougang, namely the Beijing city government. The contract system adopted at Shougang consisted of four elements:

- Profits handed-over to the state were to **increase by 7.2% annually** – the base figure was the profit submitted in 1981. Any profits over this amount were retained by the enterprise.
- Of the retained profit, 60% was to be used as development funds, 20% as collective welfare funds, and 20% as bonuses for the employees: this was the **6:2:2 system**.
- No financial assistance was to be forthcoming from the state and Shougang was to be responsible for its assets depreciation.
- The size of the wage-bill was linked to the enterprise's profits: for every 1% increase in profits there was to be a 0.8% rise in the payroll.

The contract system hardened the immediate financial pressure on Shougang. Each year, Shougang paid a state infrastructure tax, amounting to 15%

of retained profits. Being proportionate to the enterprise's retained profits, these payments rose at a much faster rate than did the contracted profits hand-over. Shougang made various other payments to the government, e.g. industrial and commercial tax, income tax, adjustment tax (*tiaojie shui*), and city construction tax (*chengshi jianshe shui*).

3.1.1 Autonomy within constraints

The managerial autonomy permitted to Shougang after 1978 was much less than that which farmers received under the contract system. State control was only relaxed gradually, and in many respects remained tight even in the mid-1990s.

Although there was no official representative on the Board of Directors of Shougang, the Party Secretary, Factory Head, Deputy-Head and General Manager were appointed by the All-China Central Party Organisations and the State Council. The Deputy General Manager and other comparable positions were appointed by the Beijing city government. It may be more accurate to describe the "Board of Directors" (*lishihui*) as the "management team" or the executive directors. Shougang's real "Board of Directors" was the Beijing government, to whom the "preferred dividend" (in the form of profits hand-over) was paid.

Government control over Shougang's product prices and production structure gradually atrophied, only finally disappearing in the late 1990s. Shougang was allowed to sell 15% of planned output (compared to 2% for ordinary enterprises in 1986-1987) and all output above the plan at up to 20% above planned prices (the 20% ceiling was abolished after 1988). Throughout the period 1985-1992, the proportion sold by Shougang to the free market was around one-third to one-half of total output. Shougang was, and still is, China's leading producer mainly at the lower value-added end of steel products, e.g. small section steel and wire rods. The competition was strongest from emerging, small-scale producers. In 1997, local and "non-system" (i.e. outside the planning framework) plants accounted for 69% of output of small section steel and 53% of the output of wire rods (CMISI, 1998, pp. 8-44). These products benefited much less from

economies of scale, often required less complex, lumpy equipment, and needed less attention to product quality.

The government still set the wage structure and the rights to make workers redundant.² Unlike Western steel firms, Shougang was forced to look towards growth rather than redundancy as the main path to solving the problem of surplus employees. In 1996, average annual wages (including bonuses and subsidies) in Chinese keypoint steel plants stood at 10,507 yuan, compared to 10,136 yuan at Shougang, 10,230 yuan at Angang and 12,232 yuan at Wugang. Baogang alone among the large steel plants had substantially higher average wages at 25,000 yuan (ISIC, 1997, pp. 122-123; CMISI, 1998, pp. 276-280). The wage structure in Shougang was based on three components: (1) basic wage, as determined by the worker's skill (accounted for 50% of income in 1993); (2) bonus, as determined by the monthly evaluation of the employee's performance (accounted for 30% of income); and (3) the year-on-year bonus, as determined by the overall performance of the enterprise (accounted for 20% of income).

3.1.2 Modernisation of the core steel-making business

In 1983, Shougang merged with 17 large profit-making steel-makers in Beijing, with a total of around 30,000 employees, under the directive of the city government. These factories, together with Shougang itself, form the backbone of the Shougang steel business (Li, *et al.*, 1992, pp. 225-226). However, Shougang faced the booming market demand with such outdated facilities that foreign visitors in the early years called it a “museum of metallurgical history”.³ It was imperative to both grow and modernise simultaneously.

Rather than needing prior approval for the purchase of any item valued above 800 yuan, Shougang was granted “complete autonomy” on the allocation of resources earmarked for investment, as long as it fulfilled its target for profits hand-over to the state. From 1980 to 1990, Shougang spent 4.27 billion yuan for technical renovation and capital construction on 108 key projects, all of them earning sufficient profits to recoup their investment outlays within two years (Li, *et al.*, 1992). In 1993, Shougang allocated 320 million yuan to research and development (R&D), equivalent to 2.5% of total sales value and 10% of total

profits in that year. In 1994, Shougang had three design institutes and 72 research institutes, employing a total of 8,000 full-time research personnel.

Shougang's approach to modernisation was: "Shougang first, China second, imports third". It made careful comparisons of the costs of repair and replacement, and did not hesitate to combine them if this reduced costs and speeded up improvement with minimum interruption to production. Foreign equipment was only bought if it was suitable, and was combined as far as possible with Shougang's own technology. From 1980 to 1990, Shougang spent US\$315 million to import 512 items of advanced technology and equipment (CD, 9 October 1990). Shougang intentionally purchased equipment that was in good condition but was not highly automated, and itself automated the equipment. A second-hand high-speed wire rod rolling machine with its German automated control system was bought from a Belgian firm in 1984 and installed in Shougang's No. 2 Wire Rod Plant by Shougang's technicians. After more than 100 technical innovations, in 1992, it produced 700,000 tons of wire rods, which exceeded its original design capacity by 250,000 tons (CDBW, 21 March 1993). The total cost of the No. 2 Steel Mill was 400 million yuan, only one-third of the estimated cost of a comparable set of new equipment from abroad.

Shougang's output of crude steel rose from 1.8 million tons in 1978 to 8 million tons in 1997. It was one of the three largest Chinese steel producers. By 1997, almost all the steel at Shougang was produced with oxygen converters, and 78% of its steel products was produced by the continuous-casting method. The share of electric furnaces at Shougang (50%) was high compared to other large SOEs. Electric furnaces are typically necessary for the production of high quality alloy steel. By 1997, Shougang produced 312,000 tons of alloy steel, the largest producer of such steel product in China (CMISI, 1998). Its output per worker was 50% above that at old integrated steel plants such as Panzihua, Benxi and Angang.

3.1.3 Merger, diversification, transnationalisation

Shougang was in the vanguard of M&As within China, most of which were administratively co-ordinated. Shougang's 14 second-tier companies (*erji gongsi*) were tightly managed by Shougang's headquarters, operating under a

strict contract system. By the early 1990s, it owned 158 large and medium-sized plants, had 57 domestic affiliates, 39 JVs and 26 equity JVs or solely-funded enterprises. It had risen to be the fourth largest company in China in terms of total sales value (DRC, 1993, pp. 2-3). Shougang also rapidly expanded its international operations. By 1994, Shougang had 26 overseas enterprises and offices scattered in 13 countries and regions including America, Europe, Southeast Asia, the Middle East and the former USSR (SG, 1995).

The main channel for Shougang's expansion in steel production after 1995 was intended to be through the planned construction of the new 10 million-ton plant, Qilu Iron and Steel in Shandong province.⁴ Much of Shougang's diversification and transnationalisation in the later phase of the contract system was related to this goal.

- **Machine-building capability:** After the mergers of 20 large machinery enterprises and 13 military factories in 1988, the Shougang Heavy Machinery Corporation was established to design and build machinery to meet the urgent metallurgical and mining needs generated by Shougang's growth.⁵ It had 60,000 employees and more than 20 machinery plants scattered over eight provinces. It also exported metallurgical equipment, internal combustion engines, automobile components, hardware and tools, etc. (SG, 1995, p. 8; 1998, p. 2).
- **Construction capacity:** By 1992, Shougang had 10 construction companies, comprising the Shougang Construction Corporation, with a total of 80,000 employees. They were engaged in the construction, installation and commissioning of blast furnaces, power stations and other heavy auxiliary equipment relating to the steel industry.
- **Design and electronic control capability:** Shougang's technical capability was greatly extended after it acquired 70% of the Mesta Engineering Company in Pittsburgh for US\$3.4 million in 1988. In 1991, Shougang manufactured its first complete blast furnace in which all the parts, including the computer control system, were produced within the Corporation. In 1992, Mesta's technical strength and international reputation enabled Shougang to win the bid to design and manufacture a bolt plate leveller for the Portland Plant of Morgan Steel Mills Inc.⁶ By 1994, Shougang Electronics Corporation

employed 3,000 engineers experienced in electronics design, programming, engineering and manufacturing.

- **Mining capability:** Shougang established an iron ore mine at Qian'an *xian* in Hebei province in 1960. By the 1990s, it had over 26,000 employees (ISIC, 1997, p. 166). However, Shougang had to pay large, undisclosed natural resource fees (*ziyuanfei*) to the local government for the mining rights. This accounted for the 297 million yuan loss recorded for the Qian'an mine in 1997 (SG, 1998, p. 39). In 1992, Shougang purchased the Hierro iron mine in Peru for US\$120 million, originally intended to guarantee the supply of raw material for Qilu (Liu, *et al.*, 1994). It has 40 years of reserves at an annual rate of production of 15 million tons.
- **Shipping capability:** The high price of freight – which accounted for up to one-half of the total purchase price of second-hand equipment – led Shougang to set up a shipping JV with the Hong Kong Hongda Shipping Company. In 1990, the company merged with the Zhenjiang Shipping Company to form the Shougang Shipping and Ship Construction Company (SRDC, 1992, pp. 116-117). By 1994, it had a total transportation capacity of 2.4 million tons.
- **Export capability:** Shougang spent US\$20 million to purchase 51% of a steel trading company in Hong Kong, Tung Wing Iron and Steel Ltd. in 1992 (Wang, 1993, p. 207). By 1993, Shougang controlled seven listed companies in Hong Kong, with US\$1.54 billion worth of assets. In 1992, Shougang's foreign exchange earnings had reached US\$350 million, accounting for 17% of Shougang's total revenue. It had become China's largest manufacturing exporter.

3.1.4 Military-style management methods

Renovation of any single substantial segment of Shougang had profound implications in other parts of the enterprise. Limited funds and constraints of space in Beijing meant that Shougang had to rely heavily on upgrading existing facilities, which impelled them to carry out technological transformations as quickly as possible. Time spent in renovation meant income foregone from having segments of the plant shut down. It was from this income that the resources for

further renovation came. In this sense, the contract system imposed the hardest of budget constraints upon Shougang.

Each of the major technological renovations was treated as a battle, with the Corporation organised like an army. From 1992 to 1995, Shougang carried out more than ten large technological renovation projects. The renovation of the No. 2 Blast Furnace involved the investment of 130 million yuan in dismantling 13,000 tons of material and installing 25,000 tons of material. Over 7,000 workers were assigned to work day and night in a 100m³ area. It was completed in 55 days rather than the 104 days that had originally been scheduled (BR, 13-19 January 1992, p. 16).

The technological and financial imperatives led to each major renovation being treated as a battle, which tended to push the firm towards a highly centralised military style structure. The four necessary conditions for successful military-style organisation are as follows:

- **A unified command system** to plan and act as an integrated entity.
- **Strict discipline**, in order to meet severe technological requirements. If production targets were not fulfilled three months running, the work of senior staff was examined and those considered responsible were removed. The strict discipline also applied to cadres, e.g. 10% of Shougang's cadres at and above the level of subordinate plant and division management were either demoted (643) or dismissed (35) between 1978 and 1990 (Hao, 1992, p. 157; Xu & Liu, 1992, p. 217).
- **Full mobilisation**, in order to master new and imported technology at all levels. While the Corporation was responsible to the state, each of its subdivisions and each member of the staff knew their responsibility for the fulfilment of the overall output, profit and other economic and technical tasks. The function of the internal contract system was to mobilise rather than to monitor, as the Taylorist monitoring/reward system does. It owed much more to the mobilisatory tradition of the CCP and the PLA than to study of Western management theory.
- **A strong supporting service** to support full mobilisation and the "battlefront". Shougang not only provided its employees with heavily

subsidised housing, but also cheaper food, health care, daily-use commodities, kindergartens and martyrs' graves. The 20,000 employees in Shougang's Commission for Managing the Livelihood of Employees were required to support the collective effort, irrespective of the time or the day. This is analogous to the function of rear supply units in an army.

In contrast to the traditional theory of consumer economics and profit maximisation, Thurow (1991, p. 51) has argued that in Japan during its rise to global power in the 1980s, competition was treated as warfare rather than a rational process of profit maximisation. Janelli's (1993, p. 226) detailed account of a large Korean firm speaks of a "military style of life [that] pervaded the enterprise". Shougang's mobilisatory, quasi-military and highly disciplined management style under the contract system is a variant of the same East Asian tradition. In the transition to a market-oriented economy, the military style of traditional communist culture is a potentially valuable institutional force to assist the struggle to modernise and do battle in the marketplace. It can help to avoid the institutional problems of the typical large Western firm, such as principle/agent struggle, free-riding and bureaucratic hierarchy, which arise because the employees are motivated primarily by individual economic interests. Shougang's army-style organisation, aiming not for profit maximisation but for victory in the battles of technical modernisation and growth may look irrational, but was effective during the contract system period.

3.2 Shougang since the contract system

The contract system was discontinued after the completion of the 15-year contract in December 1995. After 1995, Shougang was technically supposed to pay profits taxes and turnover taxes as laid down by law. The Beijing government directly reimburses Shougang all of its profits tax, which amounted to around 70 million yuan in 1997 (on pre-tax profits of 351 million yuan). However, Shougang has to pay 10% of its total sales revenue as turnover tax to the Beijing government (around 1.7 billion yuan in 1996 and 1.8 billion yuan in 1997), which is much higher than the profits tax reimbursement, and several times higher than the total retained profits (180-200 million yuan in 1995 and 1996). It appears that the

turnover tax has replaced the hand-over of the contract system as the “preferred dividend” to the sole shareholder, the Beijing City government.

A number of businesses have been sold or substantially restructured and a number of expansion plans have been dropped since 1995. Much of the change has stemmed from the failure of Shougang to obtain approval from the central government to expand steel production outside Beijing. e.g. the Qilu and Liuzhou projects have been dropped. A reassessment of Shougang’s strategy recognised that the Corporation’s development was limited by several factors, e.g. poor products mix, low profitability of second-tier companies, a heavy debt burden, and a large number of surplus workers.⁷ Shougang had borrowed heavily to finance the ambitious diversification programme in the early 1990s. In 1996, Shougang’s total debt was 18.4 billion yuan, of which 79% was short-term.⁸ In June 1998, Shougang’s Board of Directors outlined five development strategies for taking Shougang into the twenty-first century (SG, 1998, pp. 5-32):

PLACE FIGURE 1 ABOUT HERE

- Establishing a **modern management system**: Shougang Corporation (the core company) was renamed the Beijing Shougang (Group) Company Limited (Figure 1). The Beijing government designated the Beijing Shougang (Group) Company Limited as the core company with the authority to enforce its shareholder’s rights upon second-tier companies within the Shougang Group. A hierarchical managerial system with the Board of Directors, Managers and a Monitoring Committee in the core and second-tier companies has been established. None of its members can simultaneously sit on the Board of Directors and the General Management Team. Shougang will spin-off seven production units to form the Beijing Shougang Stock Holding Company Limited, a second-tier company within the Group, and listed on the Chinese stock market. The second-tier companies have been turned into “legal persons”, with all the associated rights and responsibilities. Economic transactions between the core and second-tier companies (or among second-tier companies) must be based at market prices. The administrative personnel and cadres are recruited according to their capabilities, using open recruitment tests. Employees must undertake routine tests to evaluate their technical skills.

Those that fail the tests must receive re-training or accept voluntary redundancy.

- Extending the **integrated development of information technology and electronics industries**: By 2000, Shougang aims to develop integrated information technology (IT) and electronics industries, and double the sector's revenues to 3.2 billion yuan. Shougang has established the Shougang High Technology Development Office to co-ordinate the one billion yuan investment to import technology through establishing Sino-foreign joint ventures (JVs), to cultivate domestic R&D capability, and to accelerate the transformation of technological advances into commercially applicable products. Shougang hopes the Shougang NEC and the "Motorman" Robotics can act as the catalyst for the development of an integrated IT and electronics industry and increase the share of non-steel industry to account for more than 50% of total Group revenues (SCMP, 9 March 1999).
- Developing the **tertiary sector**: Without a social safety net, Shougang cannot radically downsize employment as it would create a severe social problem in Beijing. The alternative strategy has been to re-assign redundant employees to the newly developed real estate and service sectors.⁹ The Shougang Real Estates Stock Holding Company owns two million m² of property in the centre of Beijing and has a huge construction company employing around 50,000 people. The Company aims to generate revenues of 600 million yuan by the year 2000. At present, 400,000 Shougang employees and their families live in housing owned by the Shougang Service Company. Over the next three years, Shougang will build another two million m² of housing. Gradual commercialisation of the management of this huge stock of property will generate 270 million yuan of revenues by the year 2000.
- Continued **restructuring and technological upgrading of steel business**: The Beijing City government has set a limit of eight million tons of steel-making capacity at Shougang, in line with its goal of changing the production structure of Beijing towards knowledge-based and high value-added products (Luo, 1998). Shougang plans to improve the application of computers to automate the production process, improve production efficiency and reduce the emission of pollutants. Moreover, steel products are increasingly to be

manufactured in semi-finished or finished form, according to the customers' specifications. The general strategy is to improve the whole production and marketing processes from the selection and preparation of iron ores to the distribution and after-sales services. Shougang aims to raise the share of high value-added steel products from a mere 12% in 1997, to 30% in 2005, and over 60% in 2010. By 2000, it intends to raise average annual productivity per employee to more than 209,000 yuan (over US\$25,000) and 380 tons/year.

- Continued **overseas business** development: By 1996, Shougang's overseas assets were valued at US\$1.6 billion, amounting to 24% of the Group's total assets and its foreign sales amounted to US\$1.03 billion, amounting to 24% of its total revenue. Through China Shougang International Trading and Engineering Corporation (CSITEC), Shougang aims to further develop the export markets and generate more revenues in Southeast Asia, South America and Africa. It has already exported steel-making facilities to Asian less developed countries (LDCs), and it is beginning to penetrate the African market by completing a blast furnace project in Zimbabwe. Since completing the purchase, Shougang has invested US\$150 million to process the iron ore at the Hierro Mine (Peru) so that it meets pollution regulations in the DCs. The upgrading of product quality has enabled the mine to export iron ore to Brazil, the US, Japan and South Korea. The mine made annual pre-tax profits of US\$3 million since 1997. It is planned to restructure the Hierro mine and float the company on the US and Canadian stock markets.

To conclude, Shougang is one of the four steel companies that have been selected by the Chinese government to constitute the core of the future Chinese steel industry. The contract system at Shougang unleashed an extraordinary entrepreneurial energy and enormous reinvestment and modernisation programmes in the formerly traditional state-run steel plant. It constituted an important transitional step away from the complete absence of entrepreneurial incentives under the command economy. However, the contract system was a crude instrument for allocating the stream of revenue stemming from the assets that Shougang operated. In the post-contract system, Shougang's autonomy on its production structure and product marketing has increased substantially. Shougang is moving towards a new epoch, with the plans to float parts of the steel business

on the stock market, expand the total volume of steel output and increase the production of high value-added products.

4 The Chinese Pharmaceutical Industry in Reform

From the mid-1980s onward, the government relaxed state controls over the pharmaceuticals industry, allowing competition to develop gradually among suppliers. However, China's large, old-established SOEs remained tightly controlled by the government, with production and sales tasks for its main products. These plants mainly produce relatively capital-intensive upstream intermediate pharmaceuticals, especially out-of-patent antibiotics, as well as producing generic, low margin final products, e.g. penicillin and aspirin. Many of these were on a downward spiral, with old equipment, a high debt-asset ratio, low salaries, poor housing and research conditions.¹⁰

Alongside product market liberalisation, the pharmaceuticals sector gradually liberalised the structure of ownership. Two important facets of this were raising funds on the stock market and mergers and acquisitions (M&As). By the end of 1996, there were about 30 pharmaceuticals corporations listed on the Chinese stock market. One of the most important M&A deals is the merger of Shandong Xinhua Pharmaceutical Group and Shandong Lukang Pharmaceutical Group in 1999. The combined company, Shandong Xinhua Lukang Pharmaceutical Group, is controlled by the Shandong provincial government. In 1998, the third largest Chinese drug company had a turnover of 3 billion yuan, profits of 300 million yuan, total assets of 4.1 billion yuan and 20,000 employees (SCMP, 1 January 1999).

Multinational investment in the Chinese pharmaceuticals industry was permitted from early on in the reform process. From 1993 onwards, China basically applied internationally recognised practice in respect to property rights for pharmaceuticals patented in other countries, protecting the company concerned from cloning of the product by local producers. By 1997, there was a total of about 1,500 pharmaceutical JVs (CD, 14 December 1997). All of the world's top 15 pharmaceutical companies – such as Novartis, AstraZeneca, Glaxo-Wellcome, Merck, Eli Lilly, Johnson and Johnson and Bristol-Myers Squibb – set up JVs in

China. By 1996, SmithKline Beecham's JV in Tianjin had become one of China's top six pharmaceutical companies by value of sales.

China's goal is to be "one of the world's pharmaceutical giants by the middle of the next century" (CD, 14 December 1997). However, by 1998, **not one Chinese chemical drug had achieved an international patent**. The central government promised that it would support R&D in the sector through research conducted at the China Administrative Centre for New Drug Research and Development, under the State Pharmaceutical Administration. It would also support the sector's development "through readjustment of medicine prices in favour of the domestic pharmaceuticals industry"(CD, 14 December 1997).¹¹

5 The Chinese Army in Business: Sanjiu

Nanfang Pharmaceutical Plant (hereinafter called Nanfang) was established in Shenzhen Special Economic Zone (SEZ) by the Guangzhou Army Hospital in 1985. This was the PLA No. 1 Medical University under the authority of the General Logistics Department (GLD) in Beijing. The Guangzhou Army Hospital reached an agreement with Prof. Zhao Xinxian, a leading researcher in the Hospital. Under the agreement, Zhao selected another five "military intellectuals" from the Hospital to organise the building of the plant, for which the Hospital loaned them five million yuan. Between 1987 and 1991, Nanfang handed over 100 million yuan to the Hospital, amounting to two-thirds of its post-tax profits.

Under the new agreement with the GLD in 1991, Nanfang was to be placed directly under its supervision and would henceforth make its hand-over of post-tax profits to the GLD (Li & Li, 1995, p. 64-65). Under the "deal", Nanfang was granted complete operational autonomy, subject only to requiring the approval of the GLD for very large-scale investments. Nanfang was later to become the core enterprise in a newly formed conglomerate, the Sanjiu Enterprise Group. The hand-over to the GLD was a fairly stable fixed amount, totalling around 70-80 million yuan/year. Consequently, the proportion of post-tax profits handed over fell from 20% in 1991 to 12% in 1997, alongside rapid growth in Sanjiu's total profits. However, the GLD could still require Sanjiu to make a large

ad hoc hand-over, e.g. in 1995, the 23 million yuan “contribution” to the building of a new meeting hall for the GLD in Beijing. The second part of the deal was that Nanfang would take over the GLD’s 35 (mainly loss-making) enterprises in Shenzhen. Between 1992 and 1994, Sanjiu injected 200 million yuan into these enterprises. Sanjiu controlled its subordinate companies in the same way as Sanjiu was supervised by the GLD. However, the second and third-tier companies did not possess the same level of independence (Li & Li, 1995). The existing general managers and department heads in the second and third-tier enterprises had to compete openly for their old jobs. Existing managers who stayed on in their jobs had to undergo extensive retraining and were dismissed if they did not pass their examinations or performed unsatisfactorily.

5.1 Core business in Chinese medicines

5.1.1 Product selection and marketing

Although none of the pioneers in Nanfang had any experience of business, they knew instinctively that they needed to “get close to the market” to be successful.¹²

The Chinese pattern of food consumption leads to widespread stomach acidity due to an excess of glucose arising from high grain consumption. For years, Zhao had accumulated over 10,000 patient histories involving stomach treatment with *Sanjiu Weitai* (“Stomach Healthy 999”). *Sanjiu Weitai* was thought by Nanfang’s leaders to have a large potential market. In 1995, *Sanjiu Weitai* was still Nanfang’s best-selling drug, accounting for 70% of Sanjiu’s total revenue from pharmaceuticals and 37% of the total national market for stomach medicines. Its closest competitor in this field was Lizhu (Zhuhai), with 18% national market share.¹³

Zhao Xinxian frankly acknowledged: “like Coca-Cola, Nanfang’s products are simple, and our competitors’ products are not fundamentally different from ours.” Consequently, **advertising** is an important aspect of the growth of the firm. Nanfang built its own advertising firm, and hired film stars and staff from Chinese film studios to make their advertisements.¹⁴ Apart from advertisement signs

prominently displayed at numerous strategic locations in China, Sanjiu advertised *Sanjiu Weitai* on a big billboard at the corner of Seventh Avenue and 48th Street in New York in 1995. It was the first Chinese firm to advertise in Times Square. In 1989, Nanfang registered its trademark, *Sanjiu Weitai*, with the National Bureau of Industry and Commerce. In 1995, *Sanjiu Weitai* was ranked the most valuable indigenous brand name in China, worth an estimated 3.4 billion yuan. In 1998, the Sanjiu (“999”) trademark was ranked the sixth most valuable in China, valued at 4.7 billion yuan (SEG, 1997, p. 67; 1998, p. 8).

As controls over the pharmaceuticals distribution system relaxed in the late 1980s, Nanfang moved quickly to set up its **own sales network**, the Sanjiu Trading Company. The number of business representatives increased dramatically from 20 in 1990 to 291 in 1995. There were a further 1,017 “market information collectors” working on commission in over 100 Chinese cities. All those employed in the marketing system are university graduates, 90% of whom are either specialists in pharmacy or doctors. This was the largest sales network of any Chinese pharmaceutical company. Sanjiu has a sales network over most of Southeast Asia, where sales are strong among overseas Chinese. It has set up sales offices in a number of foreign countries, including America, Germany, Russia, South Africa and the Middle East. In 1994, the FDA gave Sanjiu permission to sell *Sanjiu Weitai* in the US (SEG, 1997, p. 67). Sanjiu aims to raise pharmaceutical sales from two billion yuan in 1995 to 20 billion yuan in “the shortest possible time.”

5.1.2 Modernisation

Nanfang was the first firm in China to produce Chinese medicines in a Western fashion. From 1991, Nanfang conducted a two-year comprehensive modernisation programme to meet the “Good Manufacturing Standards” (GMP), the strict standards followed by the US Food and Drug Administration (FDA). Modernisation of equipment, meticulous quality control and recording procedures were essential to meet the strict standards of GMP. Nanfang invested 70 million yuan from its own funds in upgrading its equipment, largely through imports. Despite this large investment, the debt-assets ratio at Nanfang was 15%, and 46%

for Sanjiu. By 1997, the ratio had risen to 41% for Nanfang and 60% for the whole Group, still relatively low compared to other Chinese firms.¹⁵

By the mid-1990s, all the main pieces of production equipment were of 1990s vintage. The main items are as follows:

- NF-B automatic traditional Chinese medicine extraction line
- Automatic packing line for granules
- Capsule production line
- Ointment production line
- Plastic container packing line
- Tablet production line
- Quality checking centre

Meeting the GMP standards also necessitated high worker skill levels. Existing cadres and production workers were given training courses in GMP standards, and if they failed to meet the standards they were either dismissed or removed from the production lines. Its core staff of around 500 cadres mostly have university science degrees. They have to attend compulsory computer and foreign language training courses. Cadres are strongly encouraged to participate in the part-time MBA programme in Nanfang. The high technical and linguistic skills achieved by Nanfang's cadres were important in enabling Nanfang to select appropriate equipment and use it effectively. The main imported pieces of equipment were made according to Nanfang's engineering specifications.

After rising from 96 employees in 1987 when the plant opened, to 1,163 in 1990, the number remained at around the same level thereafter. The gross value of output per employee rose from 115,000 yuan in 1987 to 328,000 yuan in 1990, reaching 1,468,000 yuan in 1994. This was achieved through ploughing back a large fraction of retained profits into the purchase of new equipment. Indeed, the number of workers on the production line had fallen from 1,500 (including temporary workers at peak periods) to just 110 in 1998.

5.1.3 Management and employment structure

Zhao Xinxian and his five army colleagues each earned around 140-150 yuan/month during the two years it took to construct Nanfang, which was 50% of their incomes at the Army Hospital. Much of their time was spent physically being involved in the construction of the plant. Their slogans were: “production first, life later” (*xianshengchan, houshenghuo*) and “hard and arduous struggle” (*jianku fendou*). The army background helped them to sustain their spirit and discipline during this tough and highly uncertain phase of business building. During these years a close bond built up among this group, which still remains at the centre of the firm’s leading cadres in the mid-1990s.

Up until 1989, all the management level personnel were members of the PLA. The CCP still plays an important role in Nanfang, especially in implanting and spreading the quality-oriented “Sanjiu spirit” in production. Around one-quarter of Nanfang’s cadres are Party members, compared to only around one-eighth of ordinary workers. Ninety-five percent of all department heads and general managers, and 14% of the permanent employees throughout the Sanjiu Group are Party members. Political and administrative power in each of the second-tier firms resides in the hands of the Party Secretary. All these have to report regularly to Zhao Xinxian, the Party Secretary of Nanfang.

The core of the Nanfang business is around 240 managerial cadres, almost all of whom are highly educated. Within these is an inner group of managers who control the destiny of the business. Of this group, about half a dozen are key founder members of business, led by Zhao Xinxian. Zhao is a powerful motivator, who was able to weld together a strong management team and provide a vision and sense of purpose to the firm. All of the 900 ordinary workers at the main plant are either temporary or contract workers, with a very high turnover rate, almost 40% per annum.

The difference between the “inner” and the “outer” firm is symbolised by the wage system put into effect after Nanfang shifted to being directly supervised by the GLD. Ordinary workers were now paid according to a regular manual workers’ wage scale. In 1995, their monthly wages ranged from 500-1,800 yuan.

The cadres were remunerated according to the 1:18 wage scale. In 1995, actual wages paid to cadres ranged from 900 yuan/month to 4,000 yuan/month for Zhao. Moreover, Sanjiu allocates 15% of the post-tax profits as bonuses on a scale of 1:3. A significant share of Nanfang's retained profits has been ploughed into building high quality housing in the plant's semi-suburban location. All the permanent employees at Nanfang live in company apartments. Rents are nominal, a "few tens" of yuan/month. Open market rents for equivalent apartments in Shenzhen are around 3,000-4,000 yuan/month. This amounts to a large addition to the real value of employees' incomes, and constitutes a major incentive to remain in employment at Nanfang. There is little difference in the size or quality of apartments among Nanfang's permanent workers, so the subsidy is a fairly egalitarian one.

5.1.4 Other pharmaceutical businesses

In the mid-1990s, Sanjiu began the policy of "Second Enterprise Establishment" (*erci chuangye*) the goal of which was to acquire pharmaceutical enterprises in the remote but resource rich western region, and turn them around through introducing the Sanjiu management system, brand name and marketing network. A leading example of this is the Ya'an Pharmaceutical Plant in Sichuan. It was acquired by Sanjiu in 1995, with Sanjiu taking an 80% ownership share for 17 million yuan. Sanjiu upgraded the manufacturing facilities substantially. Within a year, the gross value of production in Ya'an increased four-fold to 80 million yuan and its post-tax profits increased ten-fold to 15 million yuan. In 1997, Ya'an's gross value of output reached 200 million yuan and its post-tax profits reached 64.91 million yuan, which was more than 60 times higher than the best record before the acquisition (SEG, 1998, pp. 4-7). In fact, it ranked second (Nanfang was first) in the amount of profits turned over to Sanjiu in 1997 (SJB, 8 & 15 April 1998).

In 1993, Sanjiu set up a JV, the Sanjiu Pharmaceutical Company, to produce Western medicines. The main product was Locekin (Ceftriaxon), which had sales of 22.5 million yuan in 1994, still a small fraction (2%) of the value of Sanjiu's total sales. This is the vehicle that Sanjiu intends to use to raise funds on the stock markets to expand Nanfang's capacity to produce anti-arthritis and anti-

cancer drugs. As the central government regulation is that the local shareholder (Sanjiu) must control the majority share in the listed company, Sanjiu repurchased 60.9% of the shares from seven overseas shareholders after the State Council's Security Committee approved its application to list on the Chinese stock market.

5.2 Non-core businesses

Although Sanjiu was the leading producer of traditional Chinese medicines, it was highly dependent on a single, non-patented product: *Sanjiu Weitai*. In the absence of patented drugs, it had not been able to establish a strong market position in other (Chinese) medicines. Moreover, other institutions, such as local governments, are supporting their own local “champions”, e.g. *Yangwei chongji* is included in the government's free medicine programme, while Nanfang's *Sanjiu Weitai* is not.

Even after it had become China's leading pharmaceutical firm, Sanjiu was still far from being able to compete directly with the TNCs within patented Western medicine. Sales of the world's top 20 companies, ranked from US\$3.5 billion at Takeda (Japan) to US\$11.3 billion at Merck (US), were 20-50 times larger than that of Sanjiu in 1997. Even if Sanjiu were to allocate 10% of its annual revenue to R&D, the resulting amount would be just US\$20 million. This compares with an average R&D spending in 1997 of US\$1 billion by the top 20 pharmaceuticals companies in the world (IMS, 1997; CMR, 1999). Even the twentieth-ranked company, Schering-Plough, spent US\$510 million on R & D. Zhao Xinxian put this bluntly: “We must diversify, because we simply cannot match the multinationals in proprietary technology.”

A key aspect of the 1992 “deal” struck by Zhao Xinxian was that Nanfang would **merge** with the GLD's 35 plants in Shenzhen. These included firms in construction, clothing, trade, printing and packaging, taxi renting, tourism and a hotel. At a stroke, Nanfang had become a highly diversified conglomerate. Since 1991, Sanjiu has acquired 50 enterprises in 20 provinces, of which one-half were non-pharmaceuticals. By 1997, the share of the non-core businesses had risen to over 63% of Sanjiu's total output value.

The trend in Sanjiu's take-overs was towards establishing a controlling-share in the firms which it acquired. However, Sanjiu usually invites local governments to hold 10-20% share of the acquired enterprises. This not only lowers the financial risk in the take-over, but also secures political support from the local governments (SJB, 25 February 1998). A good example of its M&As is the Shijiazhuang Beer Factory in Shijiazhuang city in Hebei province. This loss-making firm was acquired in 1995. It had around 3,000 employees and was administered by the local government. Sanjiu advertised for an expert in the beer industry and replaced the existing manager. Sanjiu developed the idea of providing surplus workers with the incentive of a lump-sum severance payment (*qiansanfei*). With the help of Sanjiu's marketing network and trademark, Shijiazhuang was able to re-pay the 17 million yuan loans from Sanjiu, and turned over three million yuan in profits to the core company in 1997 (SEG, 1998, p. 6).

Despite the addition of a wide range of unrelated businesses to the portfolio, the **best performers were still pharmaceuticals firms** in 1997-1998. Although the core plant, Nanfang, accounted for only 30% of Sanjiu's total assets and 6% of Sanjiu's total employees in 1997, and generated only 37% of Sanjiu's sales value, it still accounted for one-half of the entire Sanjiu Group's pre-tax profits. Nanfang consistently achieved a profit rate on sales of between 16-22%, while for other businesses, the rate was only around 6-12%. Moreover, the two other enterprises apart from Nanfang with pre-tax profits of over 50 million yuan in 1997 were pharmaceutical firms, and three of the four enterprises with pre-tax profits of 25-50 million yuan in 1997 were also pharmaceutical enterprises (SEG, 1998, pp. 4-5; SJB, 6 May 1998).

5.3 Business structure and business strategy

By 1998, Sanjiu had evolved into a very different firm from the late 1980s. Zhao Xinxian was still **the most powerful and authoritative person** in Sanjiu. Under his leadership, the Group had developed a Decision Management Committee in charge of devising major strategic decisions for the Group (Figure 2). The Strategic Decision "Think-Tank" Committee, which incorporates a number of Chinese economists and intellectuals, provides numerous suggestions

on the development of business strategy. In 1998, the Company had nine major divisions, which all reported to the General Manager, Zhao Xinxian.

PLACE FIGURE 2 ABOUT HERE

The Group's business interests were divided into two categories: the general commercial companies and the eight major industries (Figure 2). The pharmaceuticals sector (including medical health care) was the core (first pillar) business in the Group. After 1996, Sanjiu's second pillar business was the food and beverage sector (which developed to complement the hotel and tourism sectors). The other six major industries of Sanjiu were wine manufacturing (including beers), agriculture (including the manufacturing of agricultural machinery, chemical fertiliser and cultivation), tourism (including hotels), real estate (including the construction of infrastructure and provision of construction materials), trading (including franchised dealers and retailers) and automobiles (including the manufacturing of automobiles and spare parts).¹⁶

In terms of assets and employment, the "core" of pharmaceuticals had shrunk drastically relative to non-core business. Instead of a firm of around 1,200 employees, mostly employed at a single site, the Group now owned 70 second-tier enterprises, with a total of around 3,000 employees in the first and second-tier firms, whose wages were mostly paid by the core firm and had their "file" (*dangan*) lodged at Nanfang. It also had a third, and much larger, tier of employees, who were not paid their wages by the core firm and whose "file" was not deposited at the firm's headquarters. However, they were working directly for Sanjiu. These included over 1,000 pharmaceutical salespeople working on commission, around 3,000 employees in the Sanjiu hotel chain, several thousand employees in merged businesses, and "several tens of thousands" of workers in the construction firm. By 1998, the total number of employees working for the Group may have been well over 50,000.

Even before the onset of the East Asian financial crisis, Sanjiu was re-evaluating the strategy of diversification, influenced by difficulties encountered with its increasingly diversified business portfolio. The East Asian crisis has explicitly stimulated an even sharper re-evaluation of the company's strategic

direction. It has determined to re-focus on its **core businesses in pharmaceuticals and closely related businesses**, e.g. food and beverages. Sanjiu feels that traditional Chinese medicines have a lot in common with the production and marketing of these products: they share some common elements of R&D, require high quality control over ingredients, close attention to packaging quality, need an effective sales network, and depend heavily on brand imagery. **Marketing** is at the centre of product success.

To become a modern pharmaceuticals company and the largest traditional Chinese medicine manufacturer in the world within five years, Sanjiu has revised its business strategies. The major features are as follows (SEG, 1998, pp. 3-20; SJB, 25 February 1997, 22 April 1998):

- Raising its in-house R&D investment, and developing co-operative and joint R&D projects with more than 30 medical schools and hospitals in China. At present, Nanfang is engaged in the development of 16 new patented drugs, including an anti-AIDS drug and a drug for diabetes.
- Building two FDA approved Chinese medicines manufacturing centres, one in Shenzhen and one in Sichuan. Sanjiu is also improving its production capacities of Western medicine by fostering Shenzhen Gosun Pharmaceutical Corporation to become the largest manufacturing base of cephalosporins antibiotic products in China.
- Giving close attention to the importance of intellectual property rights, including those for Chinese medicines, which is still a grey area of domestic and international laws.
- Improving the way in which it develops and uses the Sanjiu trademark and its 59 registered brand names.
- Raising funds from the stock market through subsidiaries, and being strongly committed to raising capital and transferring technology through international JVs that are consistent with Sanjiu's re-formulated business goals.
- Ensuring 100% of its workforce has attained professional high school qualification or above. In 1998, Sanjiu introduced the "profits-related promotion mechanism" in order to develop a group of talented senior managers.¹⁷

- Attempting to establish and strengthen the responsibility and risk-monitoring mechanism within each affiliated enterprise. According to the new guidelines devised in 1997, M&A targets were all to be compatible with the renewed focus on pharmaceuticals and closely related businesses. The first-tier core enterprise was not to be involved directly in any new M&A to lower its debt-assets ratio. M&A deals were only to be undertaken by second or third-tier enterprises if they were financially sound and the targets had marketable products and potential for further growth. In 1997, Sanjiu evaluated over 700 potential take-over targets, but, based on these criteria, acquired only 20 enterprises.
- Introducing a trial experiment with an employees' stock-holding scheme and strengthening the sense of belonging and sense of awareness about the importance of efficiency among Sanjiu employees.

Under the new policies, Sanjiu abandoned the attempt to make automobiles a "second pillar industry" and suspended investment in the sector. It closed down or sold off 16 poorly-managed third-tier companies. It integrated and reshuffled the assets of those companies which had recorded losses for two consecutive years or large losses in a single year (12 out of the total of 71 enterprises in the Sanjiu Group were loss-making in 1997) (SEG, 1998, pp. 5-6).

To conclude, a number of arguments can be advanced to explain Sanjiu's exceptional growth and modernisation. It enjoyed special advantages because of its location in Shenzhen SEZ. As it started from scratch, it was not burdened by the restructuring introduced in many long-established SOEs. Furthermore, it had the support of the Army's GLD.¹⁸ None of these arguments is wholly convincing, however. The initial growth of Sanjiu was based on the traditional Chinese medicines it produced. This sector is characterised more by entrepreneurial skills, product choice, quality control, marketing, and brand imagery than advanced technology. In pursuit of growth, the Group acquired diversified businesses that it was unable to run effectively. It lost valuable financial and human capital in attempting to turn the businesses around, detracting from its ability to develop its core business in which it had the highest competence. Moreover, it was in danger of diluting the valuable brand name that it had painstakingly and highly successfully

built up in the preceding period. Returning to its core competencies in pharmaceuticals marked a radical re-evaluation of its business strategy.

6 Implications and Conclusions

The experiences of Shougang and Sanjiu not only have profound implications for the future development of the Chinese steel and pharmaceutical industries, but also on the reform of large SOEs in China. The major findings and the implications of this paper are as follows:

- **Institutional first movers:** The communist “planning” system intentionally destroyed the competitive firm. Instead, the whole nation, in practice the relevant ministries, became the firm, with the enterprise essentially the passive recipient of instructions from bureaucrats. A central part of the transition from a command system to a market-based system was the re-creation of the competitive firm as the basic form of business institution. This can come in different shapes and sizes, and the reasons that explain this are complex and are often specific to the firm concerned. When increased operational independence was granted to SOEs, some responded more quickly than others to construct a competitive institutional structure. Those that were able to do so rapidly improved their market position: Shougang rose rapidly from seventh largest to be the third largest steel manufacturer in China, and Nanfang rose even more rapidly from non-existence to be number two in the pharmaceutical sector. A striking feature of TNCs has been their relative stability of position once they have achieved large size. Those large firms that are able to take the lead in the “Chinese big business race” may well be able to maintain their position for a long time to come.
- **Organisational capabilities:** Both Shougang and Sanjiu made effective use of institutions inherited from the pre-reform period. A central proposition of the “transition orthodoxy” about how to transform communist economies was that the pre-reform communist institutions should be destroyed (Nolan, 1995). It was thought by almost everyone that they were implacably opposed to reform, their interests irreconcilable with the market economy, their members incapable of turning towards the market. The experience of Shougang and

Sanjiu suggests rather that the CCP and the PLA possessed a rich legacy of organisational and motivational skills. Even old Party cadres and army officers, such as Zhou Guanwu, were able to make the transition to the market economy when given the correct incentive structure. A middle-aged one, like Zhao Xinxian, made the transition with ease. Indeed, the lifetime experience of such people, thinking strategically and mobilising people in complex institutions, was an invaluable skill for the construction of a powerful market-oriented business organisation. The experience of Shougang and Sanjiu challenged not only the traditional theory of the firm, but also the liberal neo-classical ideology which was battling for supremacy in China.

- **Entrepreneurship:** It is highly debatable whether entrepreneurship can be considered an independent variable explaining the success and failure of national economies. National entrepreneurial capability is almost always seen best as a reflection of deeper socio-economic processes. However, entrepreneurship clearly matters in considering the changes in fortune of large capitalist firms, let alone small ones. A good or bad appointment as Chief Executive Officer (CEO) makes a great deal of difference to the performance of a firm. It is impossible not to be struck by the fact that successful large Chinese firms emerging from the communist system, such as Shougang and Nanfang, often have highly effective CEOs. The reasons they came to occupy those positions typically are complex matters of business history. Moreover, most rapid technological up-grading in Shougang and Sanjiu was conducted in the early 1990s, which coincided with a property speculation boom in which most Chinese firms participated, suggesting that entrepreneurs at Shougang and Sanjiu worked for growth within their industries rather than for short-term profit maximisation. Furthermore, the formal ownership structures at Shougang and Sanjiu prior to 1996 and 1997 respectively might appear to be incompatible with effective business behaviour in the sense that they are still SOEs. The intermediary bodies with controls over those assets, namely the Beijing municipal government and the GLD, appear to have little understanding of how to stimulate effective business performance in their subordinate units. The subordinate enterprises, Shougang and Sanjiu, paid a substantial share of profits in “dividends” to their respective sole shareholders, the Beijing municipal government and the GLD. However, the “profits hand-

over” was not fundamentally different from the hand-over of dividends by the managers of a capitalist family-owned firm to the family that owns it. The enterprise management was left with a high degree of managerial autonomy, including the business strategy on M&A. The main reason for Shougang and Sanjiu’s success is not special help from the government or the PLA, but rather the fact that the leadership used their autonomy to construct a highly **effective business organisation**.

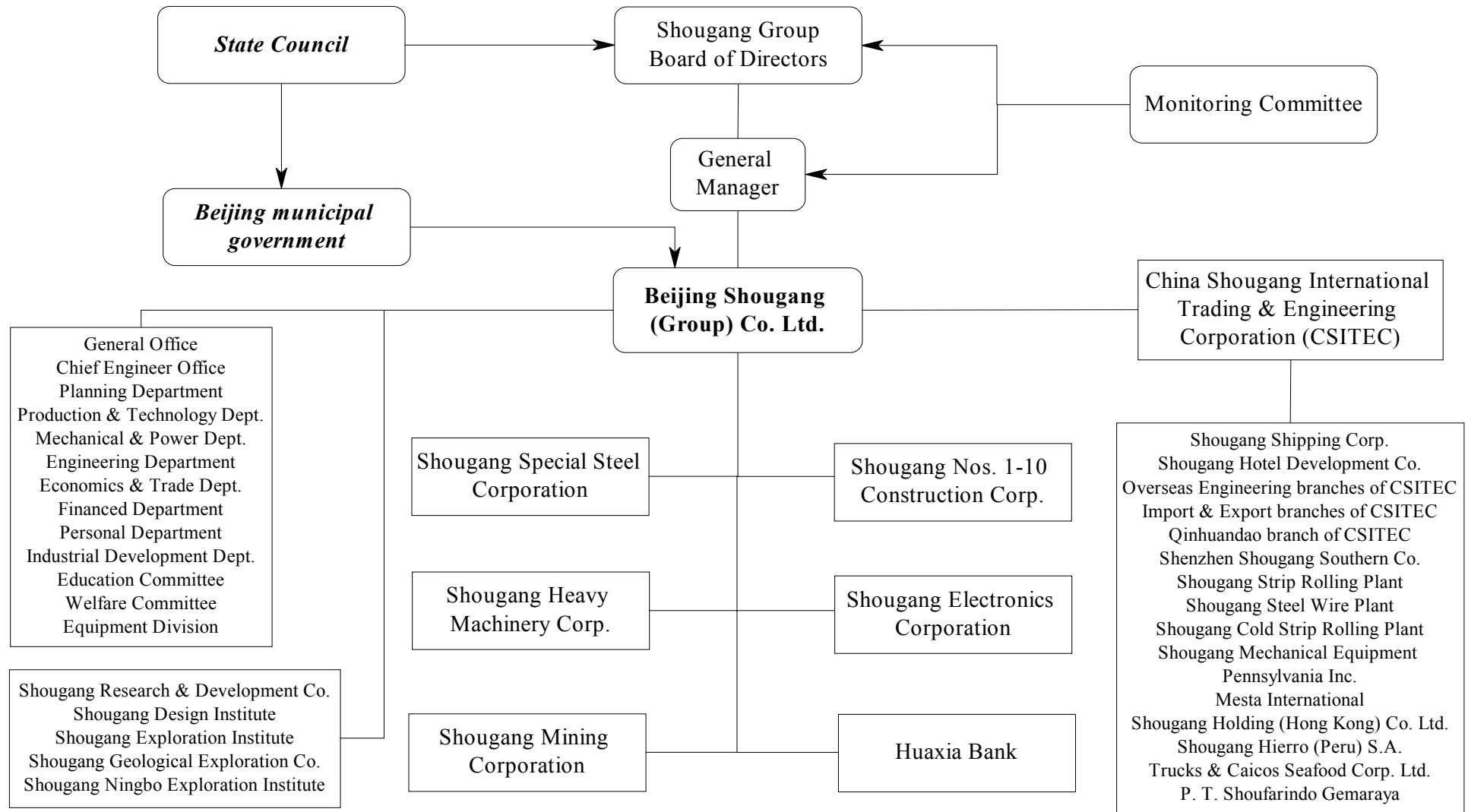
- **M&As:** Shougang and Sanjiu both grew rapidly through M&As in the absence of privatisation and a developed stock market. There were three main causes of this process. First, the government required powerful SOEs, such as Shougang and Sanjiu, to help resolve the problems of loss-making enterprises by re-organising their business structure, changing management methods and advancing technology. To this extent it was a “top-down” process. Examples of this were Shougang’s merger with the 13 loss-making “Third Front” military enterprises, and Sanjiu’s merger with the 100-odd GLD’s enterprises in Shenzhen. Second, it was due to “bottom-up” pressure from a successful, emerging large firm. A large part of both Shougang and Sanjiu’s M&As came from their own initiative, though they always required state mediation and sanction. China is not unique in this. Typically, M&As among large capitalist firms are closely involved with the highly political process of obtaining approval from the relevant government anti-monopoly apparatus, both national and international. Shougang and Sanjiu’s mergers used methods familiar under capitalism, whereby some firms acquire other loss-making firms believing that they have the capability to “dig out hidden value”, change their organisational structure and transform them into profitable entities. Bankruptcy, plant closure or mass redundancy are not the only ways to resolve the problems of loss-making enterprises. A fast-growing reforming economy, in the process of developing a business structure from scratch provided rich opportunities for such business behaviour. Furthermore, M&As are especially powerful methods of advancing business capabilities in a transitional economy, since business and technical skills are not so widely available as in an advanced economy. The merger process led by capable firms such as Shougang and Sanjiu with advanced technological and management skills, can have a powerful positive externality effect, spreading business capability more

rapidly than would otherwise be the case. Thirdly, the merger movement is due to opportunism by large firms such as Shougang and Sanjiu in response to property rights becoming more formalised and ownership becoming more tangible. They use their bargaining power with local governments to enhance the number of enterprises owned by them, in order to be able to increase the size of their firm. To some unknown degree, this is a “positioning” process, in anticipation of a possible future move towards even more concrete private property rights being permitted over former SOEs. Through merger, a large state firm can acquire potential future assets of great value, including the land on which the firm is located. In principle, a merger between two SOEs today, could bring considerable personal gain for the employees at some future point.

- **Political and social constraints:** The experience of Shougang and Sanjiu also suggests that excessive diversification, partly through administrative-mediated M&As and partly due to the political and social constraints on making massive downsizing in employment, may contribute to their long-term competitive disadvantage. Both Shougang and Sanjiu have only limited business skills in those non-core diversified business activities. They were unable to generate sufficient economies of scale, encountered fierce competition, and leaked valuable financial and human capital in attempting to turn the businesses around, distracting them from developments in the businesses in which they had the highest competence. There are already warning signs of the difficulties this has posed for Shougang and Sanjiu as a significant proportion of profits generated from their core businesses are offset by the loss-making non-core businesses. In the case of Shougang, this proportion reached a staggering 87% in 1997 (SG, 1998, pp. 3-4).¹⁹ It is striking that the most successful steel company in the world, Posco, under state ownership studiously avoided the path of conglomerate diversification so characteristic of the *chaebol* business structure of the rest of Korea. The divestment of chemical businesses by Western pharmaceutical giants during the last several years also illustrates the importance of specialisation, focus and economies of scales in the era of globalisation. Extensive diversification into downstream consumer goods and services would take Shougang and Sanjiu, and probably other leading Chinese big diversified businesses, along the path of the *chaebols* rather than Posco and Aventis. The recent attempt to return to focus on their core competencies

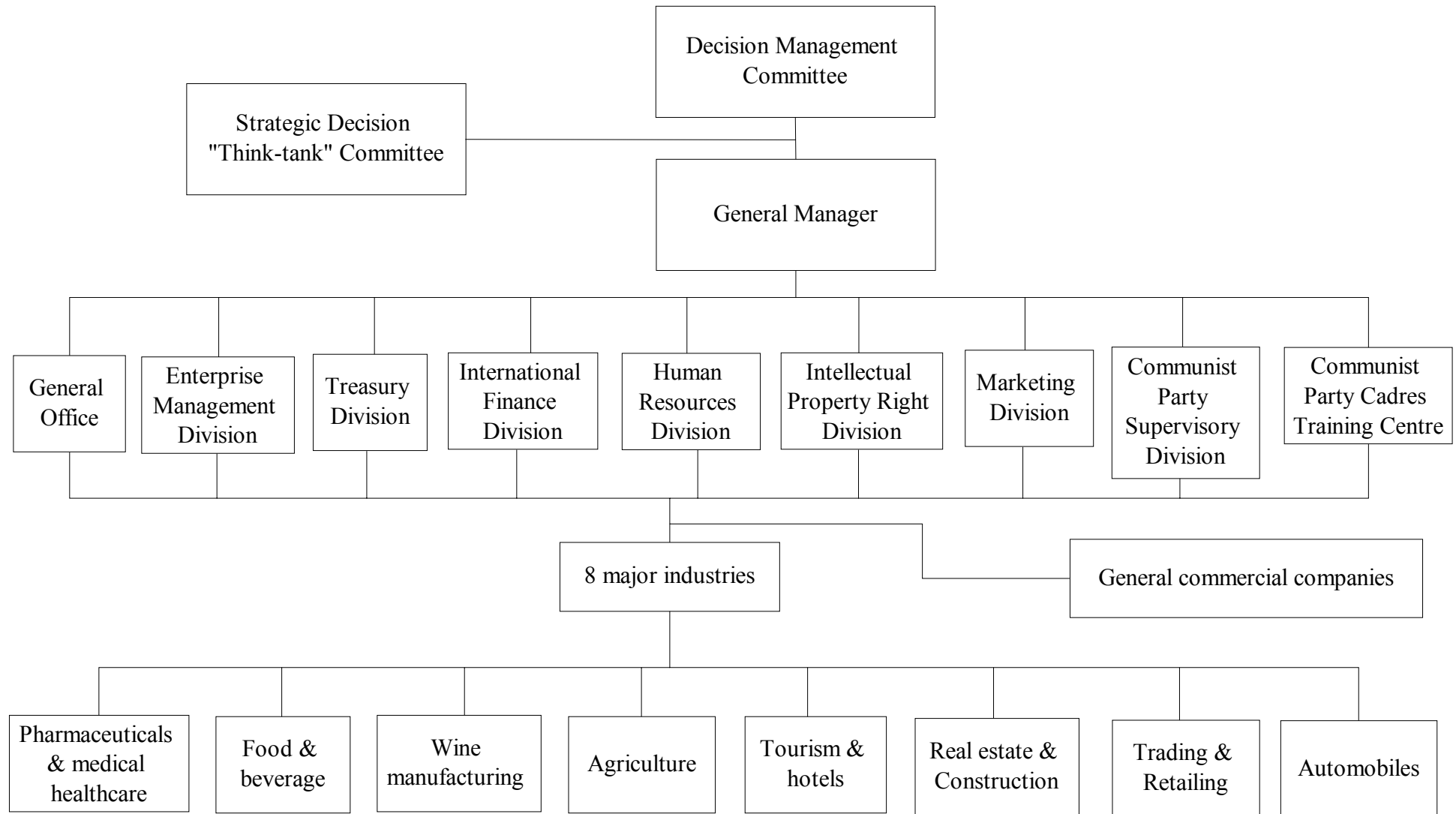
in steel and pharmaceuticals marked a radical re-evaluation of their business strategies by Shougang and Sanjiu.

Figure 1: Shougang Group Corporate Structure, 1998



Source: Shougang Group, 1998

Figure 2: The Organisational Structure of Sanjiu Enterprise Group, 1998



Source: SEG, 1997, pp. 18-19.

REFERENCES:

Abbreviations of newspaper and magazine titles:

BR: *Beijing Review*

CD: *China Daily*

CDBW: *China Daily: Business Weekly*

FT: *Financial Times*

HKS: *Hong Kong Standard*

SCMP: *South China Morning Post*

SJB: *Sanjiu Jituan Bao* (in Chinese)

- Amsden, A. & Hikino, T. 1994. "Project Execution Capability, Organisational Know-how and Conglomerate Corporate Growth in Late Industrialisation", *Industrial and Corporate Change*, Vol 3, pp. 111-147.
- Byrd, W. A. 1992. "The Second Motor Vehicle Manufacturing Plant", (ed.) *China's Industrial Firms under Reform*, New York, Oxford University Press.
- Centre for Medicines Research International. (CMR) (1998) *World-wide Pharmaceuticals R&D Expenditure 1986-1996*. (<http://www.cmr.org>)
- China Metallurgical Information and Standardisation Institute. (CMISI) 1998. *China Steel Statistics 1998*, Beijing, The Developing and Planning Department, Ministry of Metallurgical industry. (in Chinese)
- Development Research Centre. (DRC) 1993. *Listing of China's Large Enterprises*, Beijing, Economic Management. (in Chinese)
- Dickson, I. 1996. *China's Steel Imports: An Outline of Recent Trade Barriers*, University of Adelaide, Chinese Economy Research Unit, Working Paper No. 96/6.
- Hao, Zhen. 1992. "Innovation: The Path for the Socialist Firm with Chinese Characteristics", in Editorial Commission of *Reform in Shougang*, Vol. 1, Beijing, Beijing Press. pp. 153-162. (in Chinese)
- IMS. (1997) *The Pharmaceutical Market World Review 1997*. (<http://www.imshealth.com>)
- International Iron and Steel Institute. (IISI) 1999. *Steel Statistical Yearbook 1999*, (http://www.iisi.org/trends_indicators/contents.html)
- Janelli, R. 1993. *Making Capitalism*, Stanford, Stanford University Press.
- Li, Jiajie., Zhai, Huisheng. & Liu, Lusha. 1992. "The Model of Enterprise Technological Advance", in Editorial Commission of *Reform in Shougang*, Beijing, Beijing Press. pp. 223-226. (in Chinese)
- Li, Zuokeng & Li, Cunhou. (eds.) 1995. *Exploring Sanjiu, (Sanjiu tansuo)* Guangzhou, Guangdong Renmin Chubanshe. (in Chinese)
- Liu, Zhiyong. Liu, Lei. & Gan, Xiaoqing. 1994. "An Empirical Study on Transnationalisation of Shougang Corporation", in *Shougang Research and Development*, No. 3, pp. 61-65. (in Chinese)
- Luo, Bingsheng. 1998. *Reform of the Shougang Group for the Twenty-first Century*. (mimeo)
- Nolan, P. 1995. *From State Factory to Modern Corporation? Shougang Iron and Steel Plant under Economic Reform*, Department of Applied Economics, DAE Working Paper, Amalgamated Series, No 9613.

- _____. 1996. "Large Firms and Economic Reform in Planned Economies", *Cambridge Journal of Economics*, No. 1.
- _____. 1998. *Indigenous Large Firms in China's Economic Reform: The Case of Shougang Iron and Steel Corporation*, Research Notes and Studies, No. 12, Contemporary China Institute, SOAS, University of London.
- _____. & Wang, Xiaoqiang. 1998. "The Chinese Army's Firm in Business: The Case of Sanjiu Group", *The Developing Economies*, Vol. XXXVI, No. 1, March 1998.
- Sanjiu Enterprise Group. (SEG) 1997. *Unpublished report*. (in Chinese)
- _____. 1998. *Report Submitted to the General Logistics Department by Zhao Xinxian*. (Internal document, in Chinese)
- Shougang Corporation. (SG) 1995. *Shougang Corporation*, Beijing, Shougang Assiqi Advertising Company. (in Chinese)
- _____. 1998. *The Reform Agendas of the Shougang Group*, 30th June 1998. (internal document, in Chinese)
- Shougang Research and Development Company. (SRDC) 1992. "The Analysis of Economic Efficiency in the Period of Seventh Five-Year Plan", in Editorial Commission of *Reform in Shougang*, Vol. 2, Beijing, Beijing Press. pp. 91-133. (in Chinese)
- The Editorial Board of the Yearbook of Iron and Steel Industry of China. (ISIC) 1997. *The Yearbook of Iron and Steel Industry of China 1997*, Beijing, The Editorial Board of the Yearbook of Iron and Steel Industry of China. (in Chinese)
- Thurow, Lester C. 1991. *Japan: The Challenge of Producer Economics*, Marshall Lecture, University of Cambridge. (mimeo)
- Wang, Zongren. 1993. *Zhou Guanwu and Shougang - Record of Reform in Shougang*, Tianjin, Hundred Flowers Art Press. (in Chinese)
- Xu, Renzhong. & Liu, Puquan. 1992. "Breaking the Big Pot to establish True Equality", in Editorial Commission of *Reform in Shougang*, Vol. 1, Beijing, Beijing Press. pp. 213-217. (in Chinese)

¹ Some of the ideas in section 3.1 are elaborated at greater length in Nolan (1998).

² The contract system did not provide large material rewards for Shougang's leadership. The average income of the top leadership of Shougang was only double that of the ordinary workers, and subject to the same constraints on its increase. Unlike the leaders of most transnational corporations (TNCs), Shougang's leaders did not possess share options.

³ Two generators manufactured by Siemens in the 1920s and some boilers and steam turbines, which had been imported in 1918, when the company was first established, were still in use (CDBW, 6 November 1982; BR, 13-19 January 1992, p. 18).

⁴ One reason for Shougang's desire to build the Qilu Plant was to use the site to produce coke for Shougang's needs, avoiding the need to purchase from distant, high-cost sources, e.g. Shanxi.

⁵ Unlike other enterprises that Shougang had acquired, it was not allowed to return the 13 military enterprises to their previous owners, even though they were losing heavily and unable to fulfil the contracts (SG, 1998, pp. 38-39).

⁶ The US\$4.12 million leveller, which was designed by Mesta and manufactured by Shougang, was the first piece of metallurgical equipment exported by China to a developed country (DC and BR, 4-10 October 1993, p. 19).

⁷ In 1997, there was a total of 71 second-tier companies, of which 25 were loss-makers, with losses totalling 830 million yuan (SG, 1998, p. 6).

⁸ However, Angang's ratio of short-term to long-term debt was even higher, at 86%. In 1996 the ratio of debt-to-assets stood at 50% at Shougang, compared to 49% at Angang and 66% at Wugang (ISIC, 1997, pp. 134-137).

⁹ In 1998, Shougang retired and laid off 17,700 workers. Another 15,000 workers are expected to follow a similar fate in 1999 (SCMP, 9 March 1999).

¹⁰ To combat the over-supply and its financial impacts in the domestic pharmaceutical industry, the Beijing government banned the imports of ten drugs, including Vitamin C and penicillin, in 1999 (SCMP, 6 February 1999).

¹¹ By contrast, manufacturers of traditional Chinese medicines and foreign-funded enterprises enjoyed much greater freedom to set prices.

¹² Some of the ideas in section 5.1 are explored at greater length in Nolan and Wang (1998).

¹³ Sanjiu's other main products in 1995 were *Ganmaoling* (with sales of 200 million yuan), a medicine for treating colds, and *Piyanping*, a skin treatment ointment.

¹⁴ It is illegal in China to use doctors in advertisements to endorse the safety and effectiveness of pharmaceutical products.

¹⁵ In 1995, the ratio for state-owned enterprises in Shenzhen was 76%.

¹⁶ This was the classic path to growth of the diversified East Asian capitalist conglomerate, in which managerial skills were applied to a variety of business areas in lieu of being able to compete with the most powerful global businesses in proprietary technology (Amsden & Hikino, 1994).

¹⁷ Under this scheme, the general manager of any affiliated enterprise who turns over profits in excess of 50 million yuan will be promoted to be a Special Assistant General Manager within the

Group. One who turns over profits in excess of 100 million yuan will be promoted to be Group Assistant General Manager. Moreover, Zhao will give up his position of General Manager to anyone in the Group who can hand-over more profit than him (SJB, 8 April 1998).

¹⁸ The army “connections” of the Nanfang leadership were very limited. Indeed Zhao Xinxian was simply a research professor, not a high-ranking general able to pull strings on behalf of his institution.

¹⁹ The report that 20% of the 230,000 strong workers had not been paid from two to six months in 1999 suggests that Shougang may be experiencing difficulties on its cash liquidity (FT, 3 April 1999, p. 4).